ABSTRACT

A nonwoven web and method of preparing a novel nonwoven web of synthetic fiber are disclosed. An aqueous solution amide crosslinked synthetic precursor polymer is extruded under defined conditions through a plurality of die orifices to form a plurality of threadlines. The threadlines are attenuated with a defined primary gaseous source to form fiber under conditions of controlled macro scale turbulence and under conditions sufficient to permit the viscosity of each threadline, as it leaves a die orifice and for a distance of no more than about 8 cm, to increase incrementally with increasing distance from the die, while substantially maintaining uniformity of viscosity in the radial direction, at a rate sufficient to provide fiber having the desired attenuation and mean fiber diameter without significant fiber breakage. The attenuated threadlines are dried with a defined secondary gaseous source. The resulting fibers are deposited randomly on a moving foraminous surface to form a substantially uniform web. The moving foraminous surface is positioned about 10 to about 100 cm from the last gaseous source to contact the threadlines. The fibers have a mean fiber diameter in the range of about 0.1 to 30 μm and are substantially free of shot. The attenuating and drying steps are carried out under conditions of controlled macro scale turbulence.